

Appendix A

ALLERGEN SOURCE	SYSTEMATIC AND ORIGINAL NAMES	MW kDa	SEQ	ACCESSION NO. OR REFERENCES
WEED POLLENS				
<i>Asterales</i>				
Ambrosia artemisiifolia (short ragweed)	Amb a 1; antigen E Amb a 2; antigen K Amb a 3; Ra3 Amb a 5; Ra5 Amb a 6; Ra6 Amb a 7; Ra7 Amb a ?	38 38 11 5 10 12 11	C C C C C P C	8,20 8,21 22 11,23 24,25 26 27
Ambrosia trifida (giant ragweed)	Amb t 5; Ra5G	4.4	C	9,10,28
Artemisia vulgaris (mugwort)	Art v 1 Art v 2	27-29 35	C P	28A 29
Helianthus annuus (sunflower)	Hel a 1 Hel a 2; profilin	34 15.7	- C	29a Y15210
Mercurialis annua	Mer a 1; profilin	14-15	C	Y13271
GRASS POLLENS				
<i>Poales</i>				
Cynodon dactylon (Bermuda grass)	Cyn d 1 Cyn d 7 Cyn d 12; profilin	32 C C 14	C C C	30,S83343 31,X91256 31a,Y08390
Dactylis glomerata (orchard grass)	Dac g 1; AgDg1 Dac g 2 Dac g 3 Dac g 5	32 11 C 31	P C C P	32 33,S45354 33a,U25343 34
Holcus lanatus (velvet grass)	Hol l 1		C	Z27084,Z68893
Lolium perenne (rye grass)	Lol p 1; group I Lol p 2; group II Lol p 3; group III Lol p 5; Lol p IX, Lol p Ib Lol p 11; trypsin inh. Related	27 11 11 31/35	C C C 16	35,36 37,37a,X73363 38 34,39 39a
Phalaris aquatica (canary grass)	Pha a 1		C	40,S80654
Phleum pratense (timothy grass)	Phl p 1 Phl p 2 Phl p 4 Phl p 5; Ag25 Phl p 6 Phl p 12; profilin	27 32	C C P C C C	X78813 41,X75925 41A 42 43,Z27082 44,X77583

	Phl p 13; polygalacturonase	55-60	C	AJ238848
Poa pratensis (Kentucky blue grass)	Poa p 1; group I Poa p 5	33 31/34	P C	46 34,47
Sorghum halepense (Johnson grass)	Sor h 1		C	48
TREE POLLENS				
<i>Fagales</i>				
Alnus glutinosa (alder)	Aln g 1	17	C	S50892
Betula verrucosa (birch)	Bet v 1 Bet v 2; profilin Bet v 3 Bet v 4 Bet v 5; isoflavone reductase homologue Bet v 7; cyclophilin	17 15 8 33,5 18	C C C C	see list of isoallergens M65179 X79267 X87153/S54819 AF135127 P P81531
Carpinus betulus (hornbeam)	Car b 1	17	C	51
Castanea sativa (chestnut)	Cas s 1; Bet v 1 homologue Cas s5; chitinase	22	P	52
Corylus avellana (hazel)	Cor a 1	17	C	53
Quercus alba (white oak)	Que a 1	17	P	54
Cryptomeria japonica (sugi)	Cry j 1 Cry j 2	41-45	C C	55,56 57,D29772
Juniperus ashei (mountain cedar)	Jun a 1 Jun a 3	43 30	P P	P81294 P81295
Juniperus oxycedrus (prickly juniper)	Jun o 2; calmodulin-like	29	C	AF031471
Juniperus sabinaoides (mountain cedar)	Jun s 1	50	P	58
Juniperus virginiana (eastern red cedar)	Jun v 1	43	P	P81825
<i>Oleales</i>				
Fraxinus excelsior (ash)	Fra e 1	20	P	58A
Ligustrum vulgare (privet)	Lig v 1	20	P	58A
Olea europaea (olive)	Olc e 1; Olc e 2; profilin Olc e 3; Olc e 4;	16 15-18 9.2 32	C C C P	59,60 60A 60B P80741

	Ole e 5; superoxide dismutase Ole e 6;	16 10	P C	P80740 U86342
Syringa vulgaris (lilac)	Syr v 1	20	P	58A
MITES				
Acarus siro (mite)	Aca s 13; fatty acid-bind.prot.	14*	C	AJ006774
Blomia tropicalis (mite)	Blo t 5; Blo t 12; Bt11a Blo t 13; Bt6 fatty acid-binding prot		C C C	US9102 U27479 US8106
Dermatophagooides pteronyssinus (mite)	Der p 1; antigen P1 Der p 2; Der p 3; trypsin Der p 4; amylase Der p 5; Der p 6; chymotrypsin Der p 7; Der p 8; glutathione transferase Der p 9; collagenolytic serine prot. Der p 10; tropomyosin Der p 14; apolipophorin like p	25 14 28/30 60 14 25 22-28 36	C C C C P C P C C	61 62 63 64 65 66 67 67A 67B Y14906 Epton p.c.
Dermatophagooides microceras (mite)	Der m 1;	25	P	68
Dermatophagooides farinae (mite)	Der f 1; Der f 2; Der f 3; Der f 10; tropomyosin Der f 11; paramyosin Der f 14; Mag3, apolipophorin	25 14 30 98	C C C C	69 70,71 63 72 72a D17686
Euroglyphus maynei (mite)	Eur m 14; apolipophorin	177	C	AF149827
Lepidoglyphus destructor (storage mite)	Lep d 2.0101; Lep d 2.0102;	15 15	C C	73,74,75 75
ANIMALS				
Bos domesticus (domestic cattle) (see also foods)	Bos d 2; Ag3, lipocalin Bos d 4; alpha-lactalbumin Bos d 5; beta-lactoglobulin Bos d 6; serum albumin Bos d 7; immunoglobulin Bos d 8; caseins	20 14.2 18.3 67 160 20-30	C C C C C C	76,L42867 M18780 X14712 M73993 77 77
Canis familiaris (Canis domesticus (dog)	Can f 1; Can f 2; Can f 7; albumin	25 27	C C C	78,79 78,79 S72946
Equus caballus (domestic horse)	Equ c 1; lipocalin Equ c 2; lipocali	25 18.5	C P	U70823 79A,79B
Felis domesticus	Fel d 1; cat-1	38	C	15

(cat saliva)				
Mus musculus (mouse urine)	Mus m 1; MUP	19	C	80,81
Rattus norvegicus (rat urine)	Rat n 1	17	C	82,83
FUNGI				
<i>Ascomycota</i>				
Dothidiomycetes				
Alternaria alternata	Alt a 1; Alt a 2; Alt a 3; heat shock protein Alt a 6; ribosomal protein Alt a 7; YCP4 protein Alt a 10; aldehyde dehydrogenase Alt a 11; enolase Alt a 12; acid.ribosomal prot P1	28 25 70 11 22 53 45 11	C C C C C C C C	U82633 U87807,U87808 X78222, U87806 X78225 X78227, P42041 U82437 X84216
Cladosporium herbarum	Cla h 1; Cla h 2; Cla h 3; aldehyde dehydrogenase Cla h 4; ribosomal protein Cla h 5; YCP4 protein Cla h 6; enolase Cla h 12; acid.ribosomal prot P1	13 23 53 11 22 46 11	C C C C C C C	83a,83b 83a,83b X78228 X78223 X78224 X78226 X85180
Eurotiales				
	Asp f13; alkaline serine proteinase	34		84
Aspergillus Fumigatus	Asp f 1; Asp f 2; Asp f 3; peroxisomal protein Asp f 4; Asp f 5; metalloprotease Asp f 6; Mn superoxide dismutase Asp f 7; Asp f 8; ribosomal protein P2 Asp f 9; Asp f 10; aspartic protease Asp f 11; peptidyl-prolyl isom Asp f 12; heat shock prot. P70 Asp f 13; alkaline serine proteinase Asp f 15; Asp f 16; Asp f 17; Asp f 18; vacuolar serine Asp f?; Asp f?;	18 37 19 30 42 26.5 12 11 34 34 24 65 34 16 43 34 90 55	C C C C C C C C C C C C C C C C P P	83781,S39330 U56938 U20722 AJ001732 Z30424 U53561 AJ223315 AJ224333 AJ223327 X85092 84a 84b AJ002026 g3643813 AJ224865 84c 85 86
Aspergillus niger	Asp n 14; beta-xylosidase Asp n 18; vacuolar serine	105 34	C C	AF108944 84b

	proteinase Asp n ?;	85	C	Z84377
Aspergillus oryzac	Asp o 2; TAKA-amylase A Asp o 13; alkaline serine proteinase	53 34	C C	D00434,M33218 X17561
Penicillium brevicompactum	Pen b 13; alkaline serine Proteinase	33		86a
Penicillium citrinum	Pen c 1; heat shock protein P70 Pen c 3; peroxisomal membrane protein Pen c 13; alkaline serine proteinase	70 33	C	U64207 86b 86a
Penicillium notatum	Pen n 1; N-acetyl glucosaminidase Pen n 13; alkaline serine proteinase Pen n 18; vacuolar serine proteinase	68 34 32		87 89 89
Penicillium oxalicum	Pen o 18; vacuolar serine proteinase	34		89
<i>Oryzinales</i>				
Trichophyton rubrum	Tri r 2; Tri r 4; serine protease		C C	90 90
Trichophyton tonsurans	Tri t 1; Tri t 4; serine protease	30 83	P C	91 90
<i>Saccharomycetales</i>				
Candida albicans	Cand a 1	40	C	88
Candida boidinii	Cand b 2	20	C	J04984,J04985
<i>Basidiomycota</i>				
<i>Basidiolaelastomycetes</i>				
Malassezia furfur	Mal f 1; Mal f 2; MF1 peroxisomal membrane protein Mal f 3; MF2 peroxisomal membrane protein Mal f 4, Mal f 5; Mal f 6; cyclophilin homologue	21 20 35 18* 17*	C C C C	91a AB011804 AB011805 Takesako, p.c. AJ011955 AJ011956
<i>Basidiomycetes</i>				
Psilocybe cubensis	Psi c 1; Psi c 2; cyclophilin	16		91b
Coprinus comatus (shaggy cap)	Cop c 1; Cop c 2; Cop c 3; Cop c 5; Cop c 7;	11	C	AJ132235 Brander, p.c. Brander, p.c. Brander, p.c.
<i>INSECTS</i>				
Aedes aegyptii (mosquito)	Aed a 1; apyrase Aed a 2;	68 37	C C	L12389 M33157

<i>Apis mellifera</i> (honey bee)	Api m 1; phospholipase A2 Api m 2; hyaluronidase Api m 4; melittin Api m 6;	16 44 3 7-8	C C C P	92 93 94 Kettner,p.c.
<i>Bombus pennsylvanicus</i> (bumble bee)	Bom p 1; phospholipase Bom p 4; protease	16	P P	95 95
<i>Blattella germanica</i> (German cockroach)	Bla g 1; Bd90k Bla g 2; aspartic protease Bla g 4; calycin Bla g 5; glutathione transf. Bla g 6; tropomin C	36 21 22 27	C C C C	96 97 98 98
<i>Periplaneta americana</i> (American cockroach)	Per a 1; Cr-PII Per a 3; Cr-PI Per a 7; tropomyosin	72-78 37	C C C	98A Y14854
<i>Chironomus thummi</i> <i>thummi</i> (midges)	Chi t 1-9; hemoglobin Chi t 1.01; component III Chi t 1.02; component IV Chi t 2.0101; component I Chi t 2.0102; component IA Chi t 3; component II-beta Chi t 4; component IIIA Chi t 5; component VI Chi t 6.01; component VIIA Chi t 6.02; component IX Chi t 7; component VIIIB Chi t 8; component VIII Chi t 9; component X	16 16 16 16 16 16 16 16 16 16 16 16 16 16 16	C C C C C C C C C C C C C C C	99 P02229 P02230 P02221 P02221 P02222 P02231 P02224 P02226 P02223 P02225 P02227 P02228
<i>Dolichovespula maculata</i> (white face hornet)	Dol m 1; phospholipase A1 Dol m 2; hyaluronidase Dol m 5; antigen 5	35 44 23	C C C	100 101 102,103
<i>Dolichovespula arenaria</i> (yellow hornet)	Dol a 5; antigen 5	23	C	104
<i>Polistes annularis</i> (wasp)	Pol a 1; phospholipase A1 Pol a 2; hyaluronidase Pol a 5; antigen 5	35 44 23	P P C	105 105 104
<i>Polistes dominulus</i> (Mediterranean paper wasp)	Pol d 1; Pol d 4; serine protease Pol d 5;	32-34	C	DR Hoffman DR Hoffman P81656
<i>Polistes exclamans</i> (wasp)	Pol e 1; phospholipase A1 Pol e 5; antigen 5	34 23	P C	107 104
<i>Polistes fuscatus</i> (wasp)	Pol f 5; antigen 5	23	C	106
<i>Polistes metricus</i> (wasp)	Pol m 5; antigen 5	23	P	106
<i>Vespa crabro</i> (European hornet)	Vesp c 1; phospholipase Vesp c 5.0101; antigen 5	34 23	P C	107 106

	Vesp c 5.0102; antigen 5	23	C	106
Vespa mandarina (giant asian hornet)	Vesp m 1.01; Vesp m 1.02; Vesp m 5;			DR Hoffman DR Hoffman P81657
Vespula flavopilosa (yellowjacket)	Ves f 5; antigen 5	23	C	106
Vespula germanica (yellowjacket)	Ves g 5; antigen 5	23	C	106
Vespula maculifrons (yellowjacket)	Ves m 1; phospholipase A1 Ves m 2; hyaluronidase Ves m 5; antigen 5	33.5 44 23	C P C	108 109 104
Vespula pensylvanica (yellowjacket)	Ves p 5; antigen 5	23	C	106
Vespula squamosa (yellowjacket)	Ves s 5; antigen 5	23	C	106
Vespula vidua (wasp)	Ves v 5;	23	C	106
Vespula vulgaris (yellowjacket)	Ves v 1; phospholipase A1 Ves v 2; hyaluronidase Ves v 5; antigen 5	35 44 23	C P C	105A 105A 104
Myrmecia pilosula (Australian jumper ant)	Myr p 1, Myr p 2;		C C	X70256 S81785
Solenopsis geminata (tropical fire ant)	Sol g 2; Sol g 4			DR Hoffman DR Hoffman
Solenopsis invicta (fire ant)	Soli 1 2; Soli 1 3; Soli 4;	13 24 13	C C C	110,111 110 110
Solenopsis saevissima (brazilian fire ant)	Sols 2;			DR Hoffman
FOODS				
Gadus callarias (cod)	Gad c 1; allergen M	12	C	112,113
Salmo salar (Atlantic salmon)	Sals 1; parvalbumin	12	C	X97824,X97825
Bos domesticus (domestic cattle)	Bos d 4; alpha-lactalbumin Bos d 5; beta-lactoglobulin Bos d 6; serum albumin Bos d 7; immunoglobulin Bos d 8; cascins	14.2 18.3 67 160 20-30	C C C C C	M18780 X14712 M73993 77 77
Gallus domesticus (chicken)	Gal d 1; ovomucoid Gal d 2; ovalbumin Gal d 3; conalbumin (Ag22) Gal d 4; lysozyme Gal d 5; serum albumin	28 44 78 14 69	C C C C C	114,115 114,115 114,115 114,115 X60688

Substitute Specification for U.S.S.N. 10/728,051 under 37 C.F.R. § 1.125

Metapenaeus ensis (shrimp)	Met e 1; tropomyosin		C	U08008
Penaeus aztecus (shrimp)	Pen a 1; tropomyosin	36	P	116
Penaeus indicus (shrimp)	Pen i 1; tropomyosin	34	C	117
Todarodes pacificus (squid)	Tod p 1; tropomyosin	38	P	117A
Haliotis Midac (abalone)	Hal m 1	49	-	117B
Apium graveolens (celery)	Api g 1; Bet v 1 homologue Api g 4; profilin Api g 5;	16* 55/58	C P	Z48967 AF129423 P81943
Brassica juncea (oriental mustard)	Bra j 1; 2S albumin	14	C	118
Brassica rapa (turnip)	Bra r 2; prohevein-like protein	25	?	P81729
Hordeum vulgare (barley)	Hor v 1; BMAI-1	15	C	119
Zea mays (maize, corn)	Zea m 14; lipid transfer prot.	9	P	P19656
Corylus avellana (hazelnut)	Cor a 1.0401; Bet v 1 homologue	17	C	AF136945
Malus domestica (apple)	Mal d 1; Bet v 1 homologue Mal d 3; lipid transfer protein	9	C C	X83672 Pastorello
Pyrus communis (pear)	Pyr c 1; Bet v 1 homologue Pyr c 4; profilin Pyr c 5; isoflavone reductase homologue	18 14 33.5	C C C	AF05730 AF129424 AF071477
Oryza sativa (rice)	Ory s 1;		C	U31771
Persea americana (avocado)	Pers a 1; endochitinase	32	C	Z78202
Prunus armeniaca (apricot)	Pru ar 1; Bet v 1 homologue Pru ar 3; lipid transfer protein	9	C P	U93165
Prunus avium (sweet cherry)	Pru av 1; Bet v 1 homologue Pru av 2; thaumatin homologue Pru av 4; profilin		C C C	U66076 U32440 AF129425
Prunus persica (peach)	Pru p 3; lipid transfer protein	10	P	P81402
Sinapis alba (yellow mustard)	Sin a 1; 2S albumin	14	C	120
Glycine max (soybean)	Gly m 1.0101; HPS Gly m 1.0102; HPS Gly m 2 Gly m 3; profilin	7.5 7 8 14	P P P C	121 121 A57106 AJ223982

Arachis hypogaea (peanut)	Ara h 1; vicilin	63.5	C	L34402
	Ara h 2; conglutinin	17	C	L77197
	Ara h 3; glycinin	14	C	AF093541
	Ara h 4; glycinin	37	C	AF086821
	Ara h 5; profilin	15	C	AF059616
	Ara h 6; conglutin homolog	15	C	AF092846
	Ara h 7; conglutin homolog	15	C	AF091737
Actinidia chinensis (kiwi)	Act c 1; cysteine protease	30	P	P00785
Solanum tuberosum (potato)	Sol t 1; patatin	43	P	P15476
Bertholletia excelsa (Brazil nut)	Ber e 1; 2S albumin	9	C	P04403,M17146
Juglans regia (English walnut)	Jug r 1; 2S albumin	44	C	U66866
	Jug r 2; vicilin		C	AF066055
Ricinus communis (Castor bean)	Ric c 1; 2S albumin		C	P01089
OTHERS				
Anisakis simplex (nematode)	Ani s 1	24	P	A59069
	Ani s 2; paramyosin	97	C	AF173004
Ascaris suum (worm)	Asc s 1;	10	P	122
Aedes aegyptii (mosquito)	Aed a 1; apyrase	68	C	L12389
	Aed a 2;	37	C	M33157
Hevea brasiliensis (rubber)	Hev b 1; elongation factor	58	P	123,124
	Hev b 2; (1,3-glucanase	58	P	123,124
	Hev b 2; (1,3-glucanase	34/36	C	125
	Hev b 3	24	P	126,127
	Hev b 4; component of	100/110/115	P	128
	microhelix protein complex			
	Hev b 5	16	C	U42640
	Hev b 6.01 hevein precursor	20	C	M36986/p02877
	Hev b 6.02 hevein	5	C	M36986/p02877
	Hev b 6.03 C-terminal	14	C	M36986/p02877
	fragment			U80598
	Hev b 7; patatin homologue	46	C	Y15042
	Hev b 8; profilin	14	C	AJ132580/AJ1
	Hev b 9; enolase	51	C	32581
	Hev b 10; Mn-superoxide	26	C	AJ249148
	dismut			
Ctenocephalides felis felis (cat flea)	Cte f 1; Cte f 2; M1b	- 27	C	- AF231352
Homo sapiens (human autoallergens)	Hom s 1;	73*	C	Y14314
	Hom s 2;	10.3*	C	X80909
	Hom s 3;	20.1*	C	X89985

Hom s 4;	36*	C	Y17711
Hom s 5;	42.6*	C	P02538

1. Marsh, D.G., and L.R. Freidhoff. 1992. ALBE, an allergen database. IUIS, Baltimore, MD, Edition 1.0.

2. Marsh, D. G., L. Goodfriend, T. P. King, H. Lowenstein, and T. A. E. Platts-Mills. 1986. Allergen nomenclature. Bull WHO 64:767-770.

3. King, T.P., P.S. Norman, and J.T. Cornell. 1964. Isolation and characterization of allergen from ragweed pollen. II. Biochemistry 3:458-468.

4. Lowenstein, H. 1980. Timothy pollen allergens. Allergy 35:188-191.

5. Aukrust, L. 1980. Purification of allergens in *Cladosporium herbarum*. Allergy 35:206-207.

6. Demmer, M., E. A. Adelberg, A. J. Clark, and P. E. Hartman. 1966. A proposal for a uniform nomenclature in bacterial genetics. Genetics 54:61-75.

10. Bodmer, J. G., E. D. Albert, W. F. Bodmer, B. Dupont, H. A. Erlich, B. Mach, S. G. E. Marsh, W. R. Mayr, P. Parham, T. Sasuki, G. M. Th. Schreuder, J. L. Strominger, A. Svejgaard, and P. L. Terasaki. 1991. Nomenclature for factors of the HLA system, 1990. Immunogenetics 33:301-309.

15. Griffith, I.J., J. Pollock, D.G. Klapper, B.L. Rogers, and A.K. Nault. 1991. Sequence polymorphism of Amb a I and Amb a II, the major allergens in *Ambrosia artemisiifolia* (short ragweed). Int. Arch. Allergy Appl. Immunol. 96:296-304.

20. Roebber, M., D. G. Klapper, L. Goodfriend, W. B. Bias, S. H. Hsu, and D. G. Marsh. 1985. Immunochemical and genetic studies of Amb t (Ra5G), an Ra5 homologue from giant ragweed pollen. J. Immunol. 134:3062-3069.

25. Metzler, W. J., K. Valentino, M. Roebber, M. Friedrichs, D. G. Marsh, and L. Mueller. 1992. Solution structures of ragweed allergen Amb t V. Biochemistry 31:5117-5127.

30. Metzler, W. J., K. Valentine, M. Roebber, D. G. Marsh, and L. Mueller. 1992. Proton resonance assignments and three-dimensional solution structure of the ragweed allergen Amb t V by nuclear magnetic resonance spectroscopy. Biochemistry 31:8697-8705.

35. Goodfriend, L., A.M. Choudhury, J. Del Carpio, and T.P. King. 1979. Cytochromes C: New ragweed pollen allergens. Fed. Proc. 38:1415.

40. Ekramoddoullah, A. K. M., F. T. Kisil, and A. H. Schon. 1982. Allergenic cross reactivity of cytochrome c from Kentucky bluegrass and perennial ryegrass pollens. Mol. Immunol. 19:1527-1534.

45. Ansari, A., E. A. Killoran, and D. G. Marsh. 1987. An investigation of human response to perennial ryegrass (*Lolium perenne*) pollen cytochrome c (LoP p X). J. Allergy Clin. Immunol. 80:229-235.

50. Morgenstern, J.P., I.J. Griffith, A.W. Brauer, B.L. Rogers, J.F. Bond, M.D. Chapman, and M. Kuo. 1991. Amino acid sequence of Fel d I, the major allergen of the domestic cat; protein sequence analysis and cDNA cloning. Proc. Natl. Acad. Sci. USA 88:9690-9694.

55. Griffith, I.J., S. Craig, J. Pollock, X. Yu, J.P. Morgenstern, and B.L.Rogers. 1992. Expression and genomic structure of the genes encoding FdI, the major allergen from the domestic cat. Gene 113:263-268.

60. Weber, A., L. Marz, and F. Altmann. 1986. Characteristics of the asparagine-linked oligosaccharide from honey-bee venom phospholipase A2. Comp. Biochem. Physiol. 83B:321-324.

65. Weber, A., H. Schroder, K. Thalberg, and L. Marz. 1987. Specific interaction of IgE antibodies with a carbohydrate epitope of honey bee venom phospholipase A2. Allergy 42:464-470.

70. Stanworth, D. R., K. J. Dorrington, T. E. Hugli, K. Reid, and M. W. Turner. 1990. Nomenclature for synthetic peptides representative of immunoglobulin chain sequences. Bulletin WHO 68:109-111.

75. Rafnar, T., I. J. Griffith, M. C. Kuo, J. F. Bond, B. L. Rogers, and D.G. Klapper. 1991. Cloning of Amb a I (Antigen E), the major allergen family of short ragweed pollen. J. Biol. Chem. 266: 1229-1236.

80. Rogers, B.L., J.P. Morgenstern, I.J. Griffith, X.B. Yu, C.M. Counsell, A.W. Brauer, T.P. King, R.D. Garman, and M.C. Kuo. 1991. Complete sequence of the allergen Amb a II: recombinant expression and reactivity with T cells from ragweed allergic patients. J. Immunol. 147:2547-2552.

85. Klapper, D.G., L. Goodfriend, and J.D. Capra. 1980. Amino acid sequence of ragweed allergen Ra3. Biochemistry 19:5729-5734.

90. Ghosh, B., M.P. Perry, T. Rafnar, and D.G. Marsh. 1993. Cloning and expression of immunologically active recombinant Amb a V allergen of short ragweed (*Ambrosia artemisiifolia*) pollen. J. Immunol. 150:5391-5399.

95. Roebber, M., R. Hussain, D. G. Klapper, and D. G. Marsh. 1983. Isolation and properties of a new short ragweed pollen allergen, Ra6. J. Immunol. 131:706-711.

100. Lubahn, B., and D.G. Klapper. 1993. Cloning and characterization of ragweed allergen Amb a VI (abst). J. Allergy Clin. Immunol. 91:338.

105. Roebber, M., and D.G. Marsh. 1991. Isolation and characterization of allergen Amb a VII from short ragweed pollen. J. Allergy Clin. Immunol. 87:324.

110. Rogers, B.L., J. Pollock, D.G. Klapper, and I.J. Griffith. 1993. Cloning, complete sequence, and recombinant expression of a novel allergen from short ragweed pollen (abst). J. Allergy Clin. Immunol. 91:339.

115. Goodfriend, L., A.M. Choudhury, D.G. Klapper, K.M. Coulter, G. Dorval, J. DelCarpio, and C.K. Osterland. 1985. Ra5G, a homologue of Ra5 in giant ragweed pollen: isolation, HLA-DR-associated activity and amino acid sequence. Mol. Immunol. 22:899-906.

120. Breitenbach M, pers. comm.

125. Nilsen, B. M., K. Sletten, M. O'Neill, B. Smestad Paulsen, and H. van Halbeek. 1991. Structural analysis of the glycoprotein allergen Art v II from pollen of mugwort (*Artemesia vulgaris*). J. Biol. Chem. 266:2660-2668.

130. Jimenez A, Moreno C, Martinez J, Martinez A, Bartolome B, Guerra F, Palacios R 1994. Sensitization to sunflower pollen: only an occupational allergy? Int Arch Allergy Immunol 105:297-307.

135. Smith,P.M., Suphioglu,C., Griffith,I.J., Theriault,K., Knox,R.B. and Singh,M.B. 1996. Cloning and expression in yeast *Pichia pastoris* of a biologically active form of Cyn d 1, the major allergen of Bermuda grass pollen. J. Allergy Clin. Immunol. 98:331-343.

31. Suphioglu,C., Ferreira,F. and Knox,R.B. 1997. Molecular cloning and immunological characterisation of Cyn d 7, a novel calcium-binding allergen from Bermuda grass pollen. *FEBS Lett.* 402:167-172.

31a. Asturias JA, Arilla MC, Gomez-Bayon N, Martinez J, Martinez A, and Palacios R. 1997. Cloning and high level expression of Cynodon dactylon (Bermuda grass) pollen profilin (Cyn d 12) in Escherichia coli: purification and characterization of the allergen. *Clin Exp Allergy* 27:1307-1313.

5 32. Mecheri, S., G. Peltre, and B. David. 1985. Purification and characterization of a major allergen from Dactylis glomerata pollen: The Ag Dg I. *Arch. Allergy Appl. Immunol.* 78:283-289.

10 33. Guerin-Marchand,C., Senecal,H., Bouin,A.P., Leduc-Brodard,V., Taudou,G., Weyer,A., Peltre,G. and David,B. 1996. Cloning, sequencing and immunological characterization of Dac g 3, a major allergen from Dactylis glomerata pollen. *Mol. Immunol.* 33:797-806.

15 34. Klysner, S., K. Welinder, H. Lowenstein, and F. Mathiesen. 1992. Group V allergens in grass pollen IV. Similarities in amino acid compositions and amino terminal sequences of the group V allergens from Lolium perenne, Poa pratensis and Dactylis glomerata. *Clin. Exp. Allergy* 22: 491-497.

19 35. Perez M., G. Y. Ishioka, L. E. Walker, and R. W. Chesnut. 1990. cDNA cloning and immunological characterization of the rye grass allergen Lol p I. *J. Biol. Chem.* 265:16210-16215.

36. Griffith, I. J., P. M. Smith, J. Pollock, P. Theakrakulpisut, A. Avjioglu, S. Davies, T. Hough, M. B. Singh, R. J. Simpson, L. D. Ward, and R. Knox. 1991. Cloning and sequencing of Lol p I, the major allergenic protein of rye-grass pollen. *FEBS Letters* 279:210-215.

20 37. Ansari, A. A., P. Shembagamurthi, and D. G. Marsh. 1989. Complete amino acid sequence of a *Lolium perenne* (perennial rye grass) pollen allergen, Lol p II. *J. Biol. Chem.* 264:II1181-II1185.

37a. Sidoli,A., Tamborini,E., Giuntini,L., Levi,S., Volonte,G., Painti,C., De Lalla,C., Siccardi,A.G., Baralle,F.E., Galliani,S. and Arosio,P. 1993. Cloning, expression, and immunological characterization of recombinant *Lolium perenne* allergen Lol p II. *J. Biol. Chem.* 268:21819-21825.

25 38. Ansari, A. A., P. Shembagamurthi, and D. G. Marsh. 1989. Complete primary structure of a *Lolium perenne* (perennial rye grass) pollen allergen, Lol p III: Comparison with known Lol p I and II sequences. *Biochemistry* 28:8665-8670.

39. Singh, M. B., T. Hough, P. Theakrakulpisut, A. Avjioglu, S. Davies, P. M. Smith, P. Taylor, R. J. Simpson, L. D. Ward, J. McCluskey, R. Puy, and R.B. Knox. 1991. Isolation of cDNA encoding a newly identified major allergenic protein of rye-grass pollen: Intracellular targeting to the amyloplast. *Proc. Natl. Acad. Sci.* 88:1384-1388.

39a. van Ree R, Hoffman DR, van Dijk W, Brodard V, Mahieu K, Koelman CA, Grande M, van Leeuwen WA, Alberse RC. 1995. Lol p XI, a new major grass pollen allergen, is member of a family of soybean trypsin inhibitor-related proteins. *J Allergy Clin Immunol* 95:970-978.

40 40. Suphioglu,C. and Singh,M.B. 1995. Cloning, sequencing and expression in *Escherichia coli* of Pha a 1 and four isoforms of Pha a 5, the major allergen of canary grass pollen. *Clin. Exp. Allergy* 25:853-865.

41. Dolecek,C., Vrtala,S., Laffer,S., Steinberger,P., Kraft,D., Scheiner,O. and Valenta,R. 1993. Molecular characterization of Phl p II, a major timothy grass (*Phleum pratense*) pollen allergen. *FEBS Lett.* 335:299-304.

45 42. Fischer,S., Groth, M., Fahrbusch, B., Müller, WD, Kraft D, Valenta R. 1996. Characterization of Phl p 4, a major timothy grass (*Phleum pratense*) pollen allergen. *J Allergy Clin Immunol* 98:189-198.

43. Matthiesen, F., and H. Lowenstein. 1991. Group V allergens in grass pollens. I. Purification and characterization of the group V allergen from *Phleum pratense* pollen, Phl p V. *Clin. Exp. Allergy* 21:297-307.

44. Petersen,A., Bufe,A., Schrammg,C., Schlaak,M. and Becker,W.M. 1995. Characterization of the allergen group VI in timothy grass pollen (Phl p 6). II. cDNA cloning of Phl p 6 and structural comparison to grass group V. *Int. Arch. Allergy Immunol.* 108:55-59.

45 45. Valenta,R., Ball,T., Vrtala,S., Duchen,M., Kraft,D. and Scheiner,O. 1994. cDNA cloning and expression of timothy grass (*Phleum pratense*) pollen profilin in *Escherichia coli*: comparison with birch pollen profilin. *Biochem. Biophys. Res. Commun.* 199:106-118.

46. Eisch, R. E., and D. G. Klapper. 1989. Isolation and characterization of a major cross-reactive grass group I allergenic determinant. *Mol. Immunol.* 26:557-561.

47. Olsen, E., L. Zhang, R. D. Hill, F. T. Kisil, A. H. Sehon, and S. Mohapatra. 1991. Identification and characterization of the *Poa* p IX group of basic allergens of Kentucky bluegrass pollen. *J. Immunol.* 147:205-211.

48. Avjioglu, A., M. Singh, and R.B. Knox. 1993. Sequence analysis of Sor h 1, the group I allergen of Johnson grass pollen and its comparison to rye-grass Lol p I (abst). *J. Allergy Clin. Immunol.* 91:340.

49. Larsen, J.N., P. Str'man, and H. Ipsen. 1992. PCR based cloning and sequencing of isogenes encoding the tree pollen major allergen Car b I from *Carpinus betulus*, hornbeam. *Mol. Immunol.* 29:703-711.

50 50. Kos T, Hoffmann-Sommergruber K, Ferreira F, Hirschwehr R, Ahorn H, Horak F, Jager S, Sperr W, Kraft D, Scheiner O. 1993. Purification, characterization and N-terminal amino acid sequence of a new major allergen from European chestnut pollen-Cas s 1. *Biochem Biophys Res Commun* 196:1086-92.

51. Breiteneder, H., F. Ferreira, K. Hoffmann-Sommergruber, C. Ebner, M. Breitenbach, H. Rumpold, D. Kraft, and O. Scheiner. 1993. Four recombinant isoforms of Cor a 1, the major allergen of hazel pollen. *Euro. J. Biochem.* 212:355-362.

55 52. Ipsen, H., and B.C. Hansen. 1991. The NH2-terminal amino acid sequence of the immunochemically partial identical major allergens of alder (*Alnus glutinosa*) Ahc 1, birch (*Betula verrucosa*) Bet v 1, hornbeam (*Carpinus betulus*) Car b 1 and oak (*Quercus alba*) Que a 1 pollens. *Mol. Immunol.* 28:1279-1288.

53. Tanai, M., S. Ando, M. Usui, M. Kurimoto, M. Sakaguchi, S. Inouye, and T. Matuhasi. 1988. N-terminal amino acid sequence of a major allergen of Japanese cedar pollen (Cry j 1). *FEBS Lett.* 239:329-332.

54. Griffith, I.J., A. Lussier, R. Garman, R. Koury, H. Yeung, and J. Pollock. 1993. The cDNA cloning of Cry j 1, the major allergen of *Cryptomeria japonica* (Japanese cedar) (abst). *J. Allergy Clin. Immunol.* 91:339.

55 55. Sakaguchi, M., S. Inouye, M. Tanai, S. Ando, M. Usui, and T. Matuhasi. 1990. Identification of the second major allergen of Japanese cedar pollen. *Allergy* 45:309-312.

56. Gross GN, Zimbabwe JM, Capra JD 1978. Isolation and partial characterization of the allergen in mountain cedar pollen. *Scand J Immunol* 8:437-441.

58A. Obispo TM, Melero JA, Carpizo JA, Carreira J, Lombardero M 1993. The main allergen of *Olea europaea* (Ole e 1) is also present in other species of the oleaceae family. *Clin Exp Allergy* 23:311-316.

59. Cardaba, B., D. Hernandez, M. Martin, B. de Andres, V. del Pozo, S. Gallardo, J.C. Fernandez, R. Rodriguez, M. Villalba, P. Palomino, A. Basomba, and C. Lahoz. 1993. Antibody response to olive pollen antigens: association between HLA class II genes and IgE response to Ole e 1 (abst). *J. Allergy Clin. Immunol.* 91:338.

60. Villalba, M., E. Batanero, C. Lopez-Otin, L.M. Sanchez, R.I. Monsalve, M.A. Gonzalez de la Pena, C. Lahoz, and R. Rodriguez. 1993. Amino acid sequence of Ole e 1, the major allergen from olive tree pollen (*Olea europaea*). *Europ.J. Biochem.* 216:863-869.

10 60A. Asturias JA, Arilla MC, Gomez-Bayon N, Martinez J, Martinez A, Palacios R 1997. Cloning and expression of the panallergen profilin and the major allergen (Ole e 1) from olive tree pollen. *J Allergy Clin Immunol* 100:365-372.

60B. Batanero E, Villalba M, Ledesma A Puente XS, Rodriguez R 1996. Ole e 3, an olive-tree allergen, belongs to a widespread family of pollen proteins. *Fur J Biochem* 241: 772-778.

61. Chua, K. Y., G. A. Stewart, and W. R. Thomas. 1988. Sequence analysis of cDNA encoding for a major house dust mite allergen, Der p 1. *J. Exp. Med.* 167:175-182.

15 62. Chua, K. Y., C. R. Doyle, R. J. Simpson, K. J. Turner, G. A. Stewart, and W. R. Thomas. 1990. Isolation of cDNA coding for the major mite allergen Der p II by IgE plaque immunoassay. *Int. Arch. Allergy Appl. Immunol.* 91:118-123.

63. Smith WA, Thomas WR. 1996. Comparative analysis of the genes encoding group 3 allergens from *Dermatophagoides pteronyssinus* and *Dermatophagoides farinae*. *Int. Arch. Allergy Immunol.* 109: 133-40.

20 64. Lake, F.R., L.D. Ward, R.J. Simpson, P.J. Thompson, and G.A. Stewart. 1991. House dust mite-derived amylase: Allergenicity and physicochemical characterisation. *J. Allergy Clin. Immunol.* 87:1035-1042.

65. Tovey, E. R., M. C. Johnson, A. L. Roche, G. S. Cobon, and B. A. Baldo. 1989. Cloning and sequencing of a cDNA expressing a recombinant house dust mite protein that binds human IgE and corresponds to an important low molecular weight allergen. *J. Exp. Med.* 170:1457-1462.

25 66. Yasuda, H., T. Shida, T. Ando, S. Sugiyama, and H. Yamakawa. 1991. Allergenic and proteolytic properties of fourth allergens from *Dermatophagoides mites*. In: "Dust Mite Allergens and Asthma. Report of the 2nd international workshop" A. Todt, Ed., UCB Institute of Allergy, Brussels, Belgium, pp. 63-64.

67. Shen, H.-D., K.-Y. Chua, K.-L. Lin, K.-H. Hsieh, and W.R. Thomas. 1993. Molecular cloning of a house dust mite allergen with common antibody binding specificities with multiple components in mite extracts. *Clin. Exp. Allergy* 23:934-40.

30 67A. O'Neil GM, Donovan GR, Baldo BA 1994. Cloning and characterisation of a major allergen of the house dust mite *Dermatophagoides pteronyssinus*, homologous with glutathione S-transferase. *Biochim Biophys Acta*,1219:521-528.

67B. King C, Simpson RJ, Moritz RL, Reed GE, Thompson PJ, Stewart GA. 1996. The isolation and characterization of a novel collagenolytic serine protease allergen (Der p 9) from the dust mite *Dermatophagoides pteronyssinus*. *J Allergy Clin Immunol* 98:739-47.

35 68. Lind P, Hansen OC, Horn N. 1988. The binding of mouse hybridoma and human IgE antibodies to the major fecal allergen, Der p 1 of *D. pteronyssinus*. *J. Immunol.* 140:4256-4262.

69. Dilworth, R. J., C. Y. Chua, and W. R. Thomas. 1991. Sequence analysis of cDNA coding for a major house dust allergen Der f 1. *Clin. Exp. Allergy* 21:25-32.

70. Nishiyama, C., T. Yunki, T. Takai, Y. Okumura, and H. Okudaira. 1993. Determination of three disulfide bonds in a major house dust mite allergen, Der f 1. *Int. Arch. Allergy Immunol.* 101:159-166.

40 71. Trudinger, M., K. Y. Chua, and W. R. Thomas. 1991. cDNA encoding the major dust mite allergen Der f 1L. *Clin. Exp. Allergy* 21:33-38.

72. Aki T, Kodama T, Fujikawa A, Miura K, Shigeta S, Wada T, Yeo T, Murooka Y, Oka S, Ono K. 1995. Immunochemical characterisation of recombinant and native tropomyosins as a new allergen from the house dust mite *Dermatophagoides farinae*. *J Allergy Clin Immunol* 96:74-83.

73. van Hage-Hamsten, M., T. Bergman, E. Johansson, B. Persson, H. Jonvall, B. Harfast, and S.G.O. Johansson. 1993. N-terminal amino acid sequence of major allergen of the mite lepidoglyphus destructor (abst). *J. Allergy Clin. Immunol.* 91:353.

45 74. Varela J, Ventas P, Carrizo J, Barbas JA, Gimenez-Gallego G, Polo F. Primary structure of Lep d 1, the main Lepidoglyphus destructor allergen. *Eur J Biochem* 225:93-98, 1994.

75. Schmidt M, van der Ploeg J, Olson S, van Hage Hamsten M. The complete cDNA encoding the Lepidoglyphus destructor major allergen Lep d 1. *FEBS Lett* 370:11-14, 1995.

76. Rautiainen J, Rytkonen M, Pelkonen J, Penttilainen J, Perola O, Virtanen T, Zeiler T, Maatyjarvi R. BDA20, a major bovine dander allergen characterized at the sequence level is Bos d 2. Submitted.

50 77. Gjesing B, Lowenstein H. Immunochemistry of food antigens. *Ann Allergy* 53:602, 1984.

78. de Groot, H., K.G.H. Gosi, P. van Swieten, and R.C. Alberse. 1991. Affinity purification of a major and a minor allergen from dog extract: Serologic activity of affinity-purified Can f 1 and Can f 1-depleted extract. *J. Allergy Clin. Immunol.* 87:1056-1065.

79. Konieczny, A. Personal communication; Immunologic Pharmaceutical Corp.

55 79A. Bulone, V. 1998. Separation of horse dander allergen proteins by two-dimensional electrophoresis. Molecular characterisation and identification of Equ c 2.0101 and Equ c 2.0102 as lipocalin proteins. *Eur J Biochem* 253:202-211.

79B. Swiss-Prot acc. P81216, P81217.

80. McDonald, B. M. C. Kuo, J. L. Ohman, and L. J. Rosenwasser. 1988. A 29 amino acid peptide derived from rat alpha 2 euglobulin triggers murine allergen specific human T cells (abst). *J. Allergy Clin. Immunol.* 83:251.

60 81. Clarke, A. J., P. M. Cissold, R. A. Shawi, P. Beattie, and J. Bishop. 1984. Structure of mouse urinary protein genes; differential splicing configurations in the 3'-non-coding region. *EMBO J* 3:1045-1052.

82. Longbottom, J. L. 1983. Characterization of allergens from the urines of experimental animals. McMillan Press, London, pp. 525-529.

83. Lapergue, Y., K. R. Lynch, K. P. Dolans, and P. Feigelsen. 1983. Tissue-specific control of alpha 2u globulin gene expression: constitutive synthesis in submaxillary gland. *Cell* 32:453-460.

83A. Aukrust I, Borch SM. 1979. Partial purification and characterization of two *Cladosporium herbarum* allergens. *Int Arch Allergy Appl Immunol* 60:68-79.

83B. Sward-Nordmo M, Paulsen BS, Wold JK. 1988. The glycoprotein allergen Ag-54 (Cla h II) from *Cladosporium herbarum*. Structural studies of the carbohydrate moiety. *Int Arch Allergy Appl Immunol* 85:288-294.

84. Shen, et al. *J. Allergy Clin. Immunol.* 103:S157, 1999.

84A. Cramer R. Epidemiology and molecular basis of the involvement of *Aspergillus fumigatus* in allergic diseases. *Contrib. Microbiol.* Vol. 2, Karger, Basel (in press).

84B. Shen, et al. (manuscript submitted), 1999.

84C. Shen HD, Ling WL, Tan MF, Wang SR, Chou H, Han SH. Vacuolar serine proteinase: A major allergen of *Aspergillus fumigatus*. 10th International Congress of Immunology, Abstract, 1998.

85. Kumar, A., L.V. Reddy, A. Sochanik, and V.P. Kurup. 1993. Isolation and characterization of a recombinant heat shock protein of *Aspergillus fumigatus*. *J. Allergy Clin. Immunol.* 91:1024-1030.

86. Teshima, R., H. Ikeuchi, J. Sawada, S. Miyachi, S. Kitani, M. Iwama, M. Irie, M. Ichinoe, and T. Terao. 1993. Isolation and characterization of a major allergenic component (gp55) of *Aspergillus fumigatus*. *J. Allergy Clin. Immunol.* 92:698-706.

86A. Shen HD, Lin WL, Tsai JJ, Liaw SP, Han SH. 1996. Allergenic components in three different species of Penicillium: crossreactivity among major allergens. *Clin Exp Allergy* 26:444-451.

86B. Shen, et al. Abstract; The XVIII Congress of the European Academy of Allergology and Clinical Immunology, Brussels, Belgium, 3-7 July 1999.

87. Shen HD, Liaw SF, Lin WL, Ro LI, Yang HL, Han SH. 1995. Molecular cloning of cDNA coding for the 68 kDa allergen of *Penicillium notatum* using MoAbs. *Clin Exp Allergy* 25:350-356.

88. Shen, H.D., K.B. Choo, I.H. Lee, J.C. Hsieh, and S.I. Han. 1991. The 40 kd allergen of *Candida albicans* is an alcohol dehydrogenase: molecular cloning and immunological analysis using monoclonal antibodies. *Clin. Exp. Allergy* 21:675-681.

89. Shen, et al. *Clin. Exp. Allergy* (in press), 1999.

90. Woodfolk JA, Whaley LM, Piaysono RV, Benjamin DC, Platts-Mills TA. 1998. Trichophyton antigens associated with IgE antibodies and delayed type hypersensitivity. Sequence homology to two families of serine proteinases. *J Biol Chem* 273:29489-96.

91. Deuell, B., L.K. Arruda, M.L. Hayden, M.D. Chapman and T.A.E. Platts-Mills. 1991. Trichophyton tonsurans Allergen I. *J. Immunol.* 147:96-101.

91A. Schmidt M, Zargari A, Holt P, Lindblom I, Hellmén U, Whitley P, van der Ploeg J, Harfast B, Scheynius A. 1997. The complete cDNA sequence and expression of the first major allergenic protein of *Malassezia furfur*, Mal f 1. *Eur J Biochem* 246:181-185.

91B. Horne WE, Rees G, Lehrer SB. 1995. Identification of the allergen Psi c 2 from the basidiomycete *Psilocybe cubensis* as a fungal cyclophilin. *Int Arch Allergy Immunol* 107:298-300.

92. Kuchler, K., M. Gimachi, M. J. Sippel, and G. Kreil. 1989. Analysis of the cDNA for phospholipase A2 from honey bee venom glands: The deduced amino acid sequence reveals homology to the corresponding vertebrate enzymes. *Eur. J. Biochem.* 184:249-254.

93. Gimachi, M., and G. Kreil. 1993. Bee venom hyaluronidase is homologous to a membrane protein of mammalian sperm. *Proc. Natl. Acad. Sci. USA* 90:3569-3573.

94. Habermann, E. 1972. Bee and wasp venoms. *Science* 177:314-322.

95. Jacobson, R.S., and D.R. Hoffman. 1993. Characterization of bumblebee venom allergens (abst). *J. Allergy Clin. Immunol.* 91:187.

96. Arruda LK, Vailes LD, Mann BJ, Shannon J, Fox JW, Vedvick TS, Hayden ML, Chapman MD. Molecular cloning of a major cockroach (*Blattella germanica*) allergen, Bla g 2. Sequence homology to the aposematic proteins. *J Biol Chem* 270:19563-19568, 1995.

97. Arruda LK, Vailes LD, Hayden ML, Benjamin DC, Chapman MD. Cloning of cockroach allergen, Bla g 4, identifies ligand binding proteins (or calyculins) as a cause of IgE antibody responses. *J Biol Chem* 270:31196-31201, 1995.

98. Arruda LK, Vailes LD, Benjamin DC, Chapman MD. Molecular cloning of German Cockroach (*Blattella germanica*) allergens. *Int Arch Allergy Immunol* 107:295-297, 1995.

98A. Wu CH, Lee MF, Liao SC. 1995. Isolation and preliminary characterization of cDNA encoding American cockroach allergens. *J Allergy Clin Immunol* 96: 352-359.

99. Mazur, G., X. Baur, and V. Lieberts. 1990. Hypersensitivity to hemoglobins of the Diptera family Chironomidae: Structural and functional studies of their immunogenic/allergenic sites. *Monog. Allergy* 28:121-137.

100. Soldatova, L., L. Kochounova, and T.P. King. 1993. Sequence similarity of a hornet (D. maculata) venom allergen phospholipase A1 with mammalian lipases. *FEBS Letters* 320:145-149.

101. Lu, G., L. Kochounova, and T.P. King. Whiteface hornet venom allergen hyaluronidase: cloning and its sequence similarity with other proteins (abst.). 1994. *J. Allergy Clin. Immunol.* 93:224.

102. Fang, K. S. F., M. Vitalo, P. Fehler, and T. P. King. 1988. cDNA cloning and primary structure of a white-faced hornet venom antigen, antigen 5. *Proc. Natl. Acad. Sci., USA* 85:895-899.

103. King, T. P., D. C. Moran, D. F. Wang, L. Kochounova, and B.T. Chat. 1990. Structural studies of a hornet venom allergen antigen 5, Dol m V and its sequence similarity with other proteins. *Prot. Seq. Data Anal.* 3:263-266.

104. Lu, G., M. Villalba, M.R. Coscia, D.R. Hoffman, and T.P. King. 1993. Sequence analysis and antigen cross reactivity of a venom allergen antigen 5 from hornets, wasps and yellowjackets. *J. Immunol.* 150: 2823-2830.

105. King, T. P. and Lu, G. 1997. Unpublished data.

105A. King TP, Lu G, Gonzalez M, Qian N and Soldatova L. 1996. Yellow jacket venom allergens, hyaluronidase and phospholipase: sequence similarity and antigenic cross-reactivity with their hornet and wasp homologs and possible implications for clinical allergy. *J. Allergy Clin. Immunol.* 98:588-600.

106. Hoffman, D.R. 1993. Allergens in hymenoptera venom XXV: The amino acid sequences of antigen 5 molecules and the structural basis of antigenic cross-reactivity. *J. Allergy Clin. Immunol.* 92:707-716.

107. Hoffman, D.R. 1992. Unpublished data.

108. Hoffman, D. R. 1993. The complete amino acid sequence of a yellowjacket venom phospholipase (abst.). *J. Allergy Clin. Immunol.* 91:187.

109. Jacobson, R.S., D.R. Hoffman, and D.M. Kemeny. 1992. The cross-reactivity between bee and vespid hyaluronidases has a structural basis (abst.). *J. Allergy Clin. Immunol.* 89:292.

110. Hoffman, D.R. 1993. Allergens in Hymenoptera venom XXIV: The amino acid sequences of imported fire ant venom allergens Sol i II, Sol i III, and Sol i IV. *J. Allergy Clin. Immunol.* 91:71-78.

111. Schmidt, M., R.B. Walker, D.R. Hoffman, and T.J. McConnell. 1993. Nucleotide sequence of cDNA encoding the fire ant venom protein Sol i II. *FEBS Letters* 319:138-140.

5 112. Elsayed S, Bennich H. The primary structure of Allergen M from cod. *Scand J Immunol* 3:683-686, 1974.

113. Elsayed S, Aas K, Sletten K, Johansson SGO. Tryptic cleavage of a homogeneous cod fish allergen and isolation of two active polypeptide fragments. *Immunochemistry* 9:647-661, 1972.

10 114. Hoffman, D. R. 1983. Immunochemical identification of the allergens in egg white. *J. Allergy Clin. Immunol.* 71:481-486.

115. Langeland, T. 1983. A clinical and immunological study of allergy to hen's egg white. IV. specific IgE antibodies to individual allergens in hen's egg white related to clinical and immunological parameters in egg-allergic patients. *Allergy* 38:493-500.

116. Daul, C.B., M. Slattery, J.E. Morgan, and S.B. Lehrer. 1993. Common crustacea allergens: identification of B cell epitopes with the shrimp specific monoclonal antibodies. In: "Molecular Biology and Immunology of Allergens" (D. Kraft and A. Schon, eds.). CRC Press, Boca Raton. pp. 291-293.

15 117. K.N. Shanti, B.M. Martin, S. Nagpal, D.D. Metcalfe, P.V. Subba Rao. 1993. Identification of tropomyosin as the major shrimp allergen and characterization of its IgE-binding epitopes. *J. Immunol.* 151:5354-5363.

117A. M. Miyazawa, H. Fukamachi, Y. Inagaki, G. Reese, C.B. Daul, S.B. Lehrer, S. Inouye, M. Sakaguchi. 1996. Identification of the first major allergen of a squid (*Todarodes pacificus*). *J. Allergy Clin. Immunol.* 98:948-953.

117B. A. Lopata et al. 1997. Characteristics of hypersensitivity reactions and identification of a uniqueness 49 kDa IgE binding protein (Hal-m-1) in Abalone (*Haliotis midae*). *J Allergy Clin Immunol*. Submitted

20 118. Monsalve, R.I., M.A. Gonzalez de la Peña, L. Menéndez-Arias, C. López-Otín, M. Villalba, and R. Rodríguez. 1993. Characterization of a new mustard allergen. *Bio J. Allergy Clin. Immunol.* 79:625-632.

119. Mena, R., R. Sanchez-Monge, L. Gomez, G. Salcedo, and P. Carbonero. 1992. A major barley allergen associated with baker's asthma disease is a glycosylated monomeric inhibitor of insect alpha-amylase: cDNA cloning and chromosomal location of the gene. *Plant Molec. Biol.* 20:451-458.

25 120. Menéndez-Arias, L., I. Moneo, J. Domínguez, and R. Rodríguez. 1988. Primary structure of the major allergen of yellow mustard (*Sinapis alba* L.) seed. *Sci a Eur. J. Biochem.* 177:159-166.

121. Gonzalez R, Varela J, Carrascal J, Polo F. Soybean hydrophobic protein and soybean hull allergy. *Lancet* 346:48-49, 1995.

30 122. Christou, J. F., B. Dunbar, I. Davidson, and M. W. Kennedy. 1990. N-terminal amino acid sequence identity between a major allergen of *Ascaris lumbricoides* and *Ascaris suum* and MHC-restricted IgE responses to it. *Immunology* 69:596-602.

123. Czuppon AB, Chen Z, Renner S, Engelke T, Meyer HE, Hofer M, Baur X. The rubber elongation factor of rubber trees (*Hevea brasiliensis*) is the major allergen in latex. *J Allergy Clin Immunol* 92:690-697, 1993.

35 124. Attanayaka DPSTG, Kokwick RGO, Franklin FCH. 1991. Molecular cloning and nucleotide sequencing of the rubber elongation factor gene from hevea brasiliensis. *Plant Mol Biol* 16:1079-1081.

125 127. Chye ML, Cheung KY. 1995. (1,3)-glucanase is highly expressed in Laticifers of *Hevea brasiliensis*. *Plant Mol Biol* 26:397-402.

126. Alenius H, Palosuo T, Kelly K, Kurup V, Reunala T, Mäkinen-Kiljunen S, Turjanmaa K, Fink J. 1993. IgE reactivity to 14-kD and 27-kD natural rubber proteins in Latex-allergic children with Spina bifida and other congenital anomalies. *Int Arch Allergy Immunol* 102:61-66.

127. Yeang HY, Cheong KF, Sunderasan E, Hamzah S, Chew NP, Hamid S, Hamilton RG, Cardosa MJ. 1996. The 14.6 kD (REF, Hev b 1) and 24 kD (Hev b 3) rubber particle proteins are recognized by IgE from Spina Bifida patients with Latex allergy. *J Allerg Clin Immunol* in press.

40 128. Sunderasan E, Hamzah S, Hamid S, Ward MA, Yeang HY, Cardosa MJ. 1995. Latex B-serum (-1,3-glucanase (Hev b 2) and a component of the microhelix (Hev b 4) are major Latex allergens. *J Natl Rubb Res* 10:82-99.

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